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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,906	02/22/2002	Hitoshi Narusawa	1660.1001	7374

21171 7590 10/15/2004

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
MICHALSKI, JUSTIN I	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/079,906	NARUSAWA, HITOSHI	
	Examiner	Art Unit	
	Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,5 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Amendment filed 11 August 2004 has been entered.

Response to Arguments

2. Applicant's arguments, see amendment, filed 11 August 2004, have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art. Finality of last office action is withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2, 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kandel et al. (US Patent 6,353,671) in view of "Speech Recognition System", 1 September 1970, IBM Technical Disclosure Bulletin, Vol. 13, Issue 4, Pages 828-831, (Hereinafter "IBM").

Regarding Claim 2, Kandel et al. discloses an acoustic signal processor (Figure 4) comprising: an input unit into which acoustic signals are input (112); detecting a frequency band having a highest energy level frequency bands comprising the acoustic

signals input into the input unit (Kandel discloses amplifier 114 amplifies second formant but does not pass first formants (i.e. passes second formants by identifying highest energy level, i.e. first formants) (Column 9, lines 5-9); and a circuits (114, 115, 116, and 122) for maintaining the energy level of the acoustic signals input into the input unit substantially at a constant level for frequency bands lower than the frequency band by the detector (Figure 2 discloses low frequencies maintained at a constant level), and increasing the amplification degree of the energy level of the acoustic signals input into the input unit as the frequency increases for the frequency bands higher than the frequency band detected by the detector (Figure 2 discloses upper frequencies with increased amplification). Kandel et al. does not explicitly disclose a detector, a variable equalizer, or a 6 db/octave high pass filter characteristic. However, Kandel et al. discloses that amplifier 114 amplifies second formant but does not pass first formants. One skilled in the art would recognize that some detection must take place in order to determine the first formant and higher formants to pass. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a detector to determine the first formant (i.e. highest energy level). Kandel further discloses amplifiers 114 and 122 are used to amplify frequencies producing a gain output as shown in figure 2 showing variable gain throughout the frequency range (i.e. variable equalizer). It is well known in the art that variable equalizers are used to produce variable gain over a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a variable equalizer to produce a variable gain as disclosed in Figure 2..

IBM discloses a speech recognition system which emphasizes higher formants. IBM discloses a filter shown in drawing B which rises at 6 db/octave to help raise the amplitude of the second format above that of the first formant (Paragraph bridging pages 2 and 3). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a filter of 6 db/octave in order to help raise the second format above the first format (i.e. higher frequency bands) as taught by IBM.

Regarding Claim 3, Kandel et al. discloses an acoustic signal processor (Figure 4) comprising: an input unit into which acoustic signals are input (112); detecting a frequency band having a highest energy level frequency bands comprising the acoustic signals input into the input unit (Kandel discloses amplifier 114 amplifies second formant but does not pass first formants (i.e. passes second formants by identifying highest energy level, i.e. first formants) (Column 9, lines 5-9); and a circuits (114, 115, 116, and 122) for maintaining the energy level of the acoustic signals input into the input unit substantially at a constant level for frequency bands lower than the frequency band by the detector (Figure 2 discloses low frequencies maintained at a constant level), and increasing the amplification degree of the energy level of the acoustic signals input into the input unit as the frequency increases for the frequency bands higher than the frequency band detected by the detector (Figure 2 discloses upper frequencies with increased amplification).

Kandel et al. does not explicitly disclose a detector or a variable equalizer. However, Kandel et al. discloses that amplifier 114 amplifies second formant but does

not pass first formants. One skilled in the art would recognize that some detection must take place in order to determine the first formant and higher formants to pass. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a detector to determine the first formant (i.e. highest energy level). Kandel further discloses amplifiers 114 and 122 are used to amplify frequencies producing a gain output as shown in figure 2 showing variable gain throughout the frequency range (i.e. variable equalizer). It is well known in the art that variable equalizers are used to produce variable gain over a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a variable equalizer to produce a variable gain as disclosed in Figure 2.

It is inherent that amplifiers 114 and 122 (i.e. variable equalizer) will provide a response delay time unique to the variable equalizer in order for the signal to propagate through the equalizer.

Regarding Claim 5, Kandel et al. discloses an acoustic signal processor (Figure 4) comprising: an input unit into which acoustic signals are input (112); detecting a frequency band having a highest energy level frequency bands comprising the acoustic signals input into the input unit (Kandel discloses amplifier 114 amplifies second formant but does not pass first formants (i.e. passes second formants by identifying highest energy level, i.e. first formants) (Column 9, lines 5-9); and a circuits (114, 115, 116, and 122) for maintaining the energy level of the acoustic signals input into the input unit substantially at a constant level for frequency bands lower than the frequency band by

the detector (Figure 2 discloses low frequencies maintained at a constant level), and increasing the amplification degree of the energy level of the acoustic signals input into the input unit as the frequency increases for the frequency bands higher than the frequency band detected by the detector (Figure 2 discloses upper frequencies with increased amplification).

Kandel et al. does not explicitly disclose a detector or a variable equalizer. However, Kandel et al. discloses that amplifier 114 amplifies second formant but does not pass first formants. One skilled in the art would recognize that some detection must take place in order to determine the first formant and higher formants to pass. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a detector to determine the first formant (i.e. highest energy level). Kandel further discloses amplifiers 114 and 122 are used to amplify frequencies producing a gain output as shown in figure 2 showing variable gain throughout the frequency range (i.e. variable equalizer). It is well known in the art that variable equalizers are used to produce variable gain over a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a variable equalizer to produce a variable gain as disclosed in Figure 2.

Kandel et al. further discloses the rise frequency of the variable equalizer shifts to a low frequency side as the energy level of the input acoustic signals decreases (Figure 2 discloses the frequency decreasing (low frequency side) as the acoustic gain decreases between 360 and 1440 Hz), and the rise frequency of the variable equalizer shifts to a high frequency side as the energy level of the input acoustic signals

increases (Figure 2 discloses the frequency increasing (high frequency side) as the acoustic gain increases between 360 and 1440 Hz).

Regarding Claim 7, it is inherent that the equalizer will have a response time of 5 msec for a signal of (1sec/.005sec) 200 Hz (i.e. high frequency side) and a response time of 10 msec for a signal of (1sec/0.01sec) 100 Hz (i.e. low frequency side).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

XU MEI
PRIMARY EXAMINER